2. The semiconductor device according to claim 1, characterized in that the first conductivity type high concentration region has an impurity concentration 1.2 times or more, 3 times or less, greater than that of a region, excluding the first conductivity type high concentration region, of the first conductivity type region positioned at a depth from the end portion on the second main surface side of the second conductivity type base region to an end portion on the second main surface side of the second conductivity type region.

3. The semiconductor device according to claim 1, characterized by further comprising: a first conductivity type surface region, provided on the first main surface side of the first conductivity type region, that is in contact with an end portion on the first main surface side of the first conductivity type high concentration region.

4. The semiconductor device according to claim 3, characterized in that the first conductivity type surface region is provided to the same depth as the second conductivity type base region, or shallower on the first main surface side than the second conductivity type base region.

5. The semiconductor device according to claim 3, characterized in that the first conductivity type surface region has an impurity concentration higher than that of the first conductivity type high concentration region.

6. The semiconductor device according to claim 3, characterized in that the first conductivity type high concentration region, including also the first conductivity type surface region, has an impurity concentration 1.2 times or more, 3 times or less, greater than that of a region, excluding the first conductivity type high concentration region, of the first conductivity type region positioned at a depth from the end portion on the second main surface side of the second conductivity type base region to the end portion on the second main surface side of the second conductivity type region.

7. The semiconductor device according to claim 1, characterized in that the first conductivity type high concentration region has one-third or less the thickness of the first conductivity type region positioned at a depth from the end portion on the second main surface side of the second conductivity type base region to the end portion on the second main surface side of the second conductivity type region.

8. The semiconductor device according to claim 1, characterized in that the first conductivity type high concentration region has one-eighth or more, one-fourth or less, the thickness of the first conductivity type region positioned at a depth from the end portion on the second main surface side of the second conductivity type base region to the end portion on the second main surface side of the second conductivity type region.

9. The semiconductor device according to claim 1, characterized in that the first conductivity type high concentration region has an impurity concentration 1.2 times or more, 3 times or less, greater than that of a region of the second conductivity type region adjacent to the first conductivity type high concentration region.

10. The semiconductor device according to claim 1, characterized by further comprising: a second conductivity type high concentration region on the first main surface side that has an impurity concentration higher than the impurity concentration on the second main surface side of the second conductivity type region.

11. The semiconductor device according to claim 10, characterized in that the first conductivity type high concentration region has an impurity concentration 1.5 times or more, 3 times or less, greater than that of a region, excluding the first conductivity type high concentration region, of the first conductivity type region positioned at a depth from the end portion on the second main surface side of the second conductivity type base region to the end portion on the second main surface side of the second conductivity type region.

12. The semiconductor device according to claim 10, characterized in that the second conductivity type high concentration region has one-eighth or more, one-half or less, the thickness of the second conductivity type region.

13. The semiconductor device according to claim 10, characterized in that the second conductivity type high concentration region has the same thickness as the first conductivity type high concentration region.

14. The semiconductor device according to claim 10, characterized in that a region of the second conductivity type region excluding the second conductivity type high concentration region has the same impurity concentration as a region of the first conductivity type region excluding the first conductivity type high concentration region.

15. The semiconductor device according to claim 10, characterized in that a region of the second conductivity type region excluding the second conductivity type high concentration region is such that the impurity concentration gradually decreases from the first main surface side to the second main surface side.

16. The semiconductor device according to claim 10, characterized in that the first conductivity type high concentration region and second conductivity type high concentration region are such that the impurity concentration gradually decreases from the first main surface side to the second main surface side.

17. The semiconductor device according to claim 10, characterized in that the second conductivity type high concentration region is provided deeper on the second main surface side than the end portion on the second main surface side of the first conductivity type high concentration region.

18. The semiconductor device according to claim 17, characterized in that the region of the second conductivity type high concentration region provided deeper on the second main surface side than the end portion on the second main surface side of the first conductivity type high concentration region has an impurity concentration higher than that of the first conductivity type region adjacent to the region, and has an impurity concentration lower than that of the second conductivity type high concentration region.

19. The semiconductor device according to claim 17, characterized in that the region of the second conductivity type high concentration region provided deeper on the second main surface side than the end portion on the second main surface side of the first conductivity type high concentration region has an impurity concentration 1.2 times or more greater than that of the first conductivity type region adjacent to the region.

20. The semiconductor device according to claim 1, characterized in that the planar form of the first conductivity type region and second conductivity type region is a striped form, a hexagonal lattice form, or a square form.

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